

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification : Not classified	A2	(11) International Publication Number: WO 99/22560 (43) International Publication Date: 14 May 1999 (14.05.99)
(21) International Application Number: PCT/FI98/00848 (22) International Filing Date: 2 November 1998 (02.11.98) (30) Priority Data: 974131 4 November 1997 (04.11.97) FI (71) Applicant (for all designated States except US): NOKIA TELECOMMUNICATIONS OY [FI/FI]; P.O. Box 300, FIN-00045 Nokia Group (FI). (72) Inventors; and (75) Inventors/Applicants (for US only): KOKKONEN, Juha [FI/DE]; Kiesheskerweg 8, D-40472 Düsseldorf (DE). KARHUMAA, Lauri [FI/FI]; Kotarannantie 8, FIN-90310 Oulu (FI). PONNIKAS, Pauli [FI/FI]; Mustaherukkatie 14, FIN-90800 Oulu (FI). KÄSMÄ, Ilkka [FI/FI]; Kääntötie 14, FIN-90900 Kiiminki (FI). PUPUTTI, Kimmo [FI/FI]; Rysäkuja 10, FIN-90900 Kiiminki (FI). KOPPELO, Pirjo [FI/FI]; Helasentie 33, FIN-90470 Varjakka (FI). KOPO-NEN, Teuvo [FI/FI]; Naavakuusentie 4 B 1, FIN-90240 Oulu (FI). UUSITALO, Jukka [FI/FI]; Ojukkatie 17, FIN-90800 Oulu (FI). MIKKOLA, Orvo [FI/FI]; Raita-maantie 34, FIN-90940 Jääli (FI).		(74) Agent: PAPULA REIN LAHTELA OY; Fredrikinkatu 61 A, P.O. Box 981, FIN-00101 Helsinki (FI). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>

(54) Title: METHOD FOR IMPLEMENTING A TELEPHONIC SERVICE IN AN ISDN NETWORK**(57) Abstract**

The present invention relates to a method for implementing a telephonic service in a public ISDN network, in which method a service request is transmitted from a service user's ISDN terminal over the public ISDN network to a service provider's ISDN terminal. The service request is a predefined text message, and the subscriber number of the service provider's ISDN terminal has been specified in advance.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

METHOD FOR IMPLEMENTING A TELEPHONIC SERVICE IN AN ISDN NETWORK

The present invention relates to a method for implementing a telephonic service in a public ISDN network (Integrated Services Digital Network) as defined in the preamble of claim 1, in which method a predefined service request is transmitted from a service user's ISDN terminal over a public ISDN network to a service provider's ISDN terminal.

10 In prior art, a method for implementing a telephonic service in a public telephone network is known in which a predetermined service request is transmitted over the telephone network from a service user's analogue terminal equipment, such as a telephone, to a service provider's analogue terminal equipment. An example of such a method is the present analogue safety telephone. Such a telephone, used e.g. by a person living in an old-age home, is provided with a fast dial key that the user may press to call help e.g. in the event of a fit. The subscriber number of the service user (person living in old-age home) is transmitted to the service provider (alarm receiving station) and the service user is identified by this number, whereupon the service provider may take appropriate action.

25 A problem with this prior-art method is that the only information transmitted to the service provider is the service user's telephone number. In the case of the person living in an old-age home in the above example, it is not possible to define any details as to what sort of service is needed.

30 The object of the present invention is to disclose a new method that eliminates the drawback mentioned above.

A specific object of the present invention is to disclose a method in which a free-form, predefined text message is added to the call to provide a more diversified service.

As for the features characteristic of the invention, reference is made to the claims.

In the method of the invention, the telephonic service is implemented using a public ISDN network. The public ISDN network comprises a switching centre, which comprises subscriber lines to which ISDN terminals, such as ISDN telephones, are connected. A service request is transmitted from the service user's ISDN terminal over the public ISDN network to the service provider's ISDN terminal. The service request is a predefined text message, which is sent to the service provider's ISDN terminal. The subscriber number (service number) of the service provider's ISDN terminal is specified in advance.

As compared with prior art, the present invention has the advantage that the information transmitted to the service provider's ISDN terminal is a predefined text message containing additional information instead of the mere subscriber number of the service user's ISDN terminal. Because in this method one or more different service requests are stored beforehand in the service user's ISDN terminal and for each service request the service provider's ISDN terminal to which it is to be transmitted is defined separately, a diversified choice of services is implemented in the service user's ISDN terminal. Moreover, a service request stored in advance guarantees that correct information is transmitted in an alarm situation as errors due to precipitation are eliminated.

In an embodiment of the method, the service request is transmitted using implicit service 1 of the UUS (User-to-User Signalling, UUS) auxiliary service defined in the ETS 300 102-1 standard (European Telecommunication Standard, ETS). In this case, the service request is transmitted as a text message in the UUI information element (User-User Information element) of the SETUP message. The SETUP message is a message used

in the ISDN line signalling system to start call setup and transmit information needed for call setup. UUI is an information element in which a maximum of 128 octets of data can be transmitted from an ISDN user to another. The data is transmitted from user to user without
5 any modification of content.

In an embodiment of the method, the subscriber number of the service provider's ISDN terminal is transmitted in the Called Party Number information element of the SETUP message in the manner defined in the
10 ETS 300 102-1 standard.

In an embodiment of the method, the service request and the service provider's subscriber number are stored in advance in the service user's ISDN terminal.
15

In an embodiment of the method, the number of service requests and corresponding service provider's subscriber numbers is one or more.

In an embodiment of the method, the transmission of a service request is effected by pressing a fast dial key on an ISDN terminal.
20

In an embodiment of the method, an acknowledgement of receipt of a service request is sent from the service provider's ISDN terminal.

In an embodiment of the method, the acknowledgement of receipt of a service request is transmitted in the UUI information element of the DISCONNECT message in the ISDN line signalling system, defined in the ETS 300 102-1 standard. The DISCONNECT message is a
25 message used in the ISDN line signalling system to initiate the disconnection of a call.
30

In the following, the invention will be described by the aid of a few embodiment examples by referring to the attached drawing, in which

Fig. 1 represents an embodiment of the method
35 of the invention.

Fig. 2 presents a service user's ISDN terminal used in the method of the invention.

Fig. 3 presents a signalling diagram of the method of the invention.

5 Fig. 1 presents an example of the method of the invention as applied to a safety service for old people and handicapped persons. In this example, the service user is a person living in an old-age home and has an ISDN telephone 1 in which various service re-
10 quests have been stored in the form of text messages, along with the service numbers to which each message is to be transmitted. The predefined message is transmitted to the service provider upon a single press of a fast dial key. When the person living in an old-age ho-
15 me wishes to send the service centre of the old-age home a request for help e.g. to go to the toilet, he/she presses the fast dial key on his/her ISDN telephone 1 behind which the respective message has been stored in advance. The service request is transmitted as a text
20 message via the switching centre 2 to an ISDN telephone 3 in the service centre, where an attendant acknowledges receipt of the service request and sends help to the service user.

The method can also be applied e.g. in a sys-
25 tem for calling a taxi without making an actual speech call. The service user's ISDN telephone 1 has a fast dial key on which a text message containing the service user's address and time of the day has been stored and for which the specified service number is the telephone
30 number of a cab rank. When the service user wishes to call a taxi, he/she will press the respective fast dial key. The message is transmitted to the taxi system, which automatically directs it to the nearest cab, based on the service user's address. After the request
35 has been received and accepted, the taxi system sends an acknowledgement, which contains e.g. the number of the taxicab.

Fig. 2 presents an example of an ISDN telephone 1 for a person living in an old-age home. For each fast dial key of the telephone 1, a service request and the service number to which the request is to be transmitted have been defined in advance. In this way, a diversified range of different services can be implemented. In the ISDN telephone of the person living in an old-age home, e.g. fast dial key 2 is for the case of a heart attack. Pressing this key causes a message to be transmitted to an alarm receiving station, giving notice of a heart attack and the address where an ambulance is needed. As the person only needs to press a single predetermined fast dial key when feeling like falling in a fit, calling an ambulance is a fast and easy operation. Moreover, the same ISDN telephone 1 has e.g. a fast dial key 6 for ordering lunch. In this case, the message is transmitted to a relevant service facility of the old-age home and it contains a request for lunch and the number of the person's habitation. Further, a fast dial key 9 has been defined for carrying out shopping. In this case, a home delivery agreement has been made with a grocery. The message is transmitted to the number of a home delivery service and it contains the necessary customer information and indicates a previously agreed shopping list that specifies the goods to be delivered to the customer.

Fig. 3 presents an example of a signalling diagram representing the method of the invention. When the service user presses a fast dial key on his/her ISDN telephone 1, the telephone 1 sends a SETUP message, whose Called Party Number (CLD) information element contains the subscriber number of a service provider's ISDN telephone 3 and whose User-User (UUI) information element contains a service request in the form of a text message of a length not exceeding 128 octets. The message is transmitted to the switching centre 2, which transmits it on the basis of the CLD

element to the service provider's ISDN telephone 3. When the SETUP message reaches the destination, the service provider's telephone sends an ALERTING message, which is transmitted by the switching centre 2 to the service user's telephone. A ringing tone is now heard in the service user's telephone. After the service provider has noticed the received message, it is acknowledged. The acknowledgement is effected by sending a call disconnect message DISCONNECT, whose UI element contains an acknowledgement in the form of a text message. The switching centre 2 transmits the DISCONNECT message to the service user's telephone 1, whereupon the call is disconnected.

The invention is not restricted to the examples of its embodiments described above, but many variations are possible within the scope of the inventive idea defined by the claims.

CLAIMS

1. Method for implementing a telephonic service in a public ISDN network comprising a switching centre (2), which comprises subscriber lines with ISDN terminals (1, 3) connected to them, in which method a service request is transmitted from a service user's ISDN terminal (1) over the public ISDN network to a service provider's ISDN terminal (3), characterised in that
- 10 - the service request is a predefined text message; and
- the subscriber number of the service provider's ISDN terminal (3) has been specified in advance.
2. Method as defined in claim 1, characterised in that the service request is transmitted by using implicit service 1 of the UUS auxiliary service defined in the ETS 300 102-1 standard.
- 15 3. Method as defined in claim 1 or 2, characterised in that the subscriber number of the service provider's ISDN terminal (3) is transmitted in the manner defined in the ETS 300 102-1 standard.
- 20 4. Method as defined in any one of claims 1 - 3, characterised in that the service request and the service provider's subscriber number are stored
- 25 in the service user's ISDN terminal (1) in advance.
5. Method as defined in any one of claims 1 - 4, characterised in that the number of service requests and corresponding service provider's subscriber numbers is one or more.
- 30 6. Method as defined in any one of claims 1 - 5, characterised in that the transmission of the service request is effected by pressing a fast dial key on the ISDN terminal (1, 3).
- 35 7. Method as defined in any one of claims 1 - 6, characterised in that an acknowledgement of receipt of a service request is sent from the service provider's ISDN terminal (3).
-

8. Method as defined in any one of claims 1 -
7, characterised in that the acknowledgement
of receipt of a service request is transmitted in the
User-user information element of a DISCONNECT message
5 as defined in the ETS 300 102-1 standard.

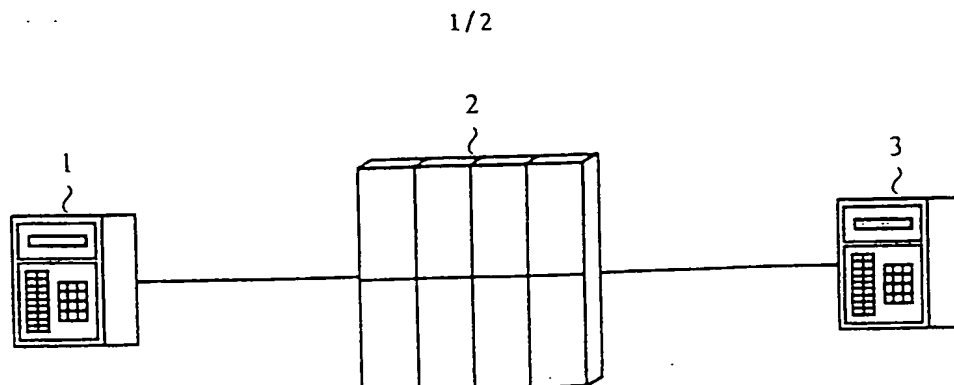


Fig. 1

FAST DIAL KEY 2:

- service provider: common emergency number 112
- service request: heart attack, name Jack Robinson
- address Telecom Street 11 A 11, 00000 London

FAST DIAL KEY 6:

- service provider: service department
- service request: lunch to habitation A 11

FAST DIAL KEY 9:

- service provider: grocery home delivery service
- service request: Jack Robinson, shopping list 2

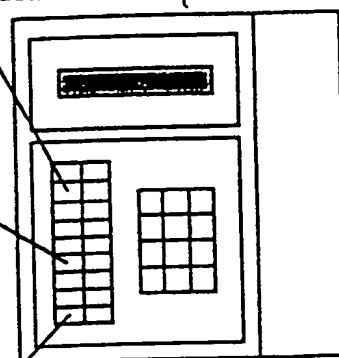


Fig. 2

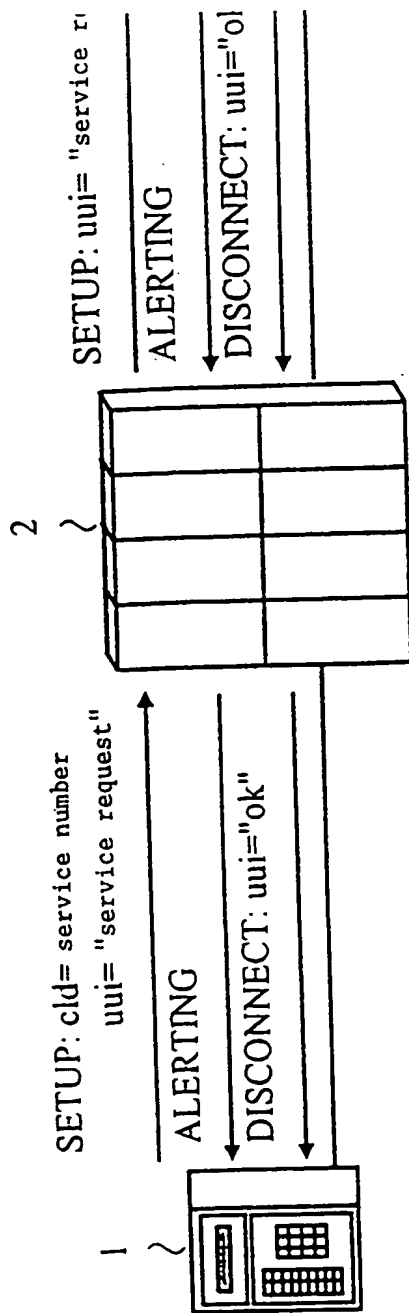


Fig. 3